



caBIG

cancer Biomedical
Informatics Grid



Enterprise Vocabulary Services (EVS)

Demonstration of how EVS can be used via the caBIO API

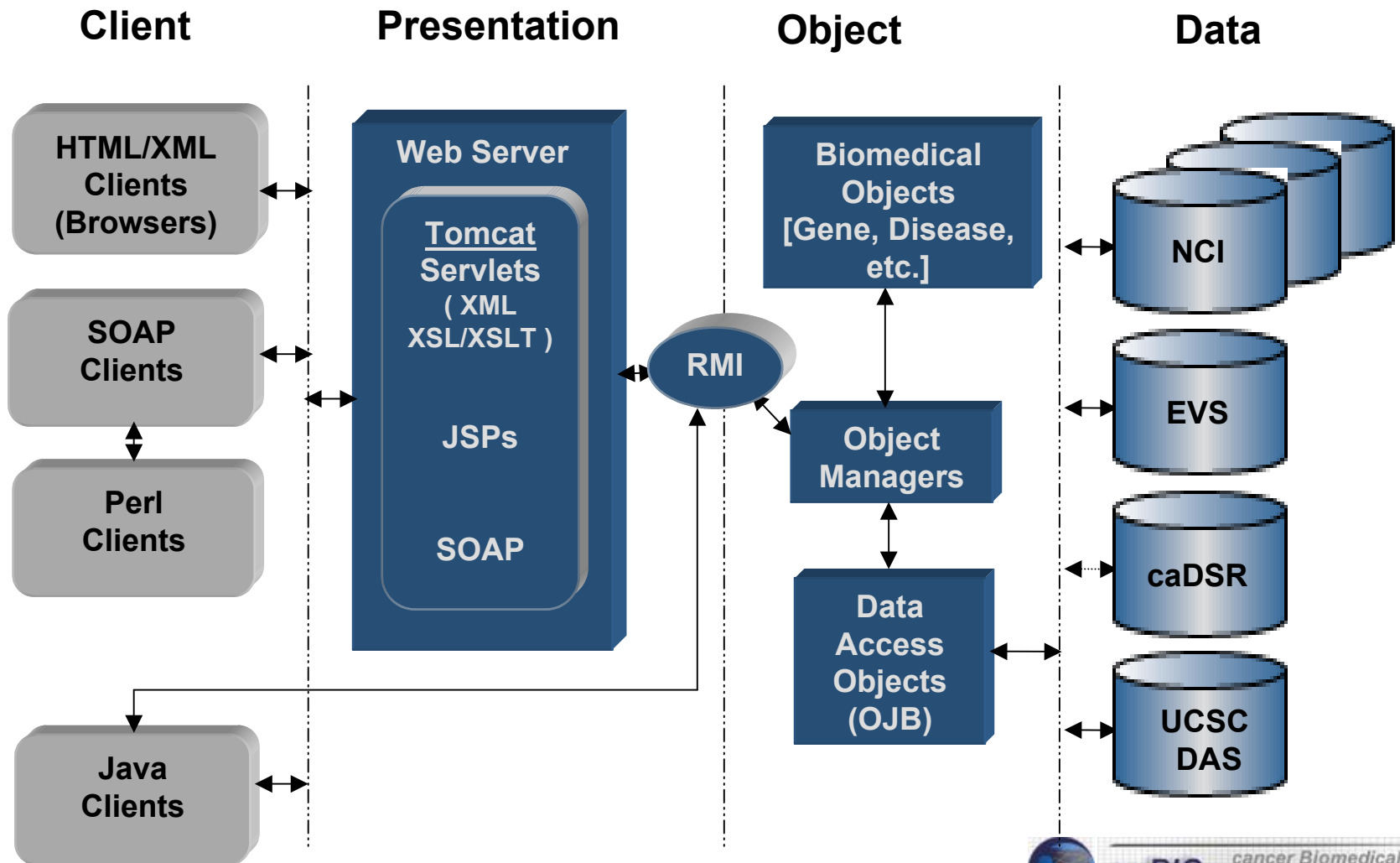
*NCICB Software Development Processes
Facilitating Systems Interoperability*

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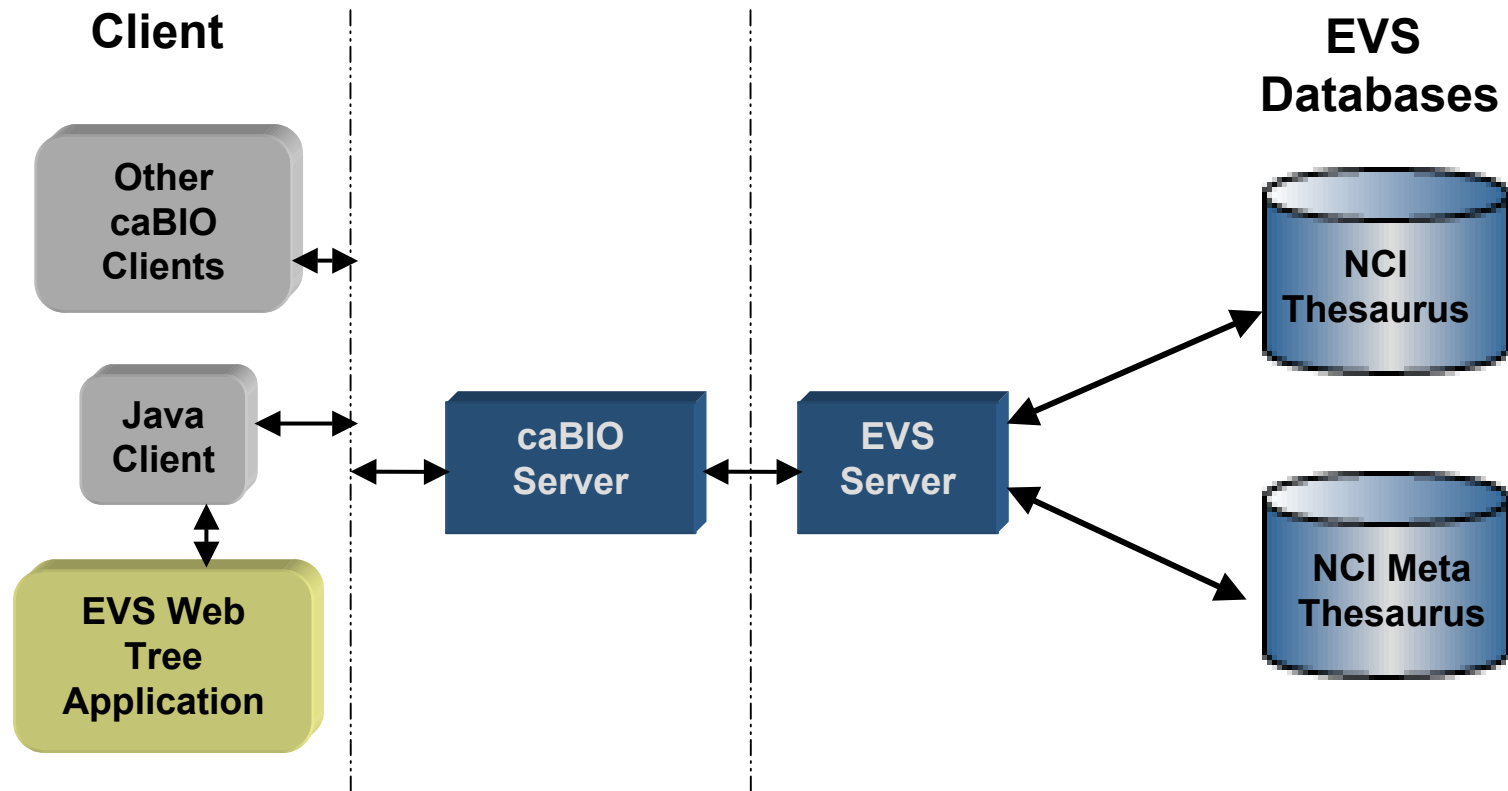
Agenda

- ▶ EVS and caBIO
 - ▶ caBIO Architecture and EVS
 - ▶ Using EVS via the caBIO API
- ▶ EVS Web Tree
 - ▶ EVS Web Tree Overview
 - ▶ Configuring EVS Web Tree
 - ▶ Using EVS Web Tree in Applications
- ▶ Q&A

caBIO Architecture



EVS and caBIO



Using EVS via the caBIO API

- Import caBIO packages and call the DescriptionLogicConcept or MetaThesaurusConcept to search/traverse through EVS data

```
Import gov.nih.nci.EVS.bean.*;

DescLogicConceptSearchCriteria dlcsc = new DescLogicConceptSearchCriteria();

DescLogicConcept dlc = new DescLogicConcept();

    dlcsc.setLimit(100);

    dlcsc.setSearchTerm("Gen*");

    dlcsc.setVocabularyName("NCI_Thesaurus");

    Concept[] conceptArray = dlc.search(dlcsc);

        for(int i=0; i<conceptArray.length; i++) {

            System.out.println(conceptArray[i].getName());

        }
```

Query Output

```
C:\WINNT\system32\cmd.exe
Gender
Gender_Minority_Enrollment
Gender_Minority_Projection
Gene
Gene-Environment_Interaction
Gene-Modified
Gene-Vector_Complex
Gene_Abnormality
Gene_Amplification
Gene_Amplification_Technique
Gene_Amplification_or_Deletion_Detection
Gene_Bank
Gene_Cloning
Gene_Combinations
Gene_Deletion
Gene_Duplication
Gene_Exchanges
Gene_Expression
Gene_Expression_Process
Gene_Family
Gene_Fusion
Gene_Knock-Out_Model
Gene_Knockout
Gene_Mapping
Gene_Mapping_Human
Gene_Mapping_Non-Human
Gene_Mutation
Gene_Product
Gene_Rearrangement
Gene_Regulation
Gene_Structure
Gene_Targeting
Gene_Therapy
Gene_Therapy_Agent
Gene_Therapy_and_Vector_Shared_Resource
Gene_Transduction_Agent
Gene_Transfer
Gene_with_Unknown_or_Unclassified_Function
General_Modifier
General_Population
```

EVS Web Tree

- ▶ EVS Web Tree is a configurable web application leveraged by NCICB applications to allow users to search and select EVS terminology
- ▶ EVS Web Tree uses the caBIO API as its infrastructure

The screenshot displays the EVS Web Tree interface. At the top, the National Cancer Institute logo and the EVS Enterprise Vocabulary Services logo are visible. Below the logos, a purple banner contains the text: "TO LOCATE A TERM: 1 Enter a word or phrase in SEARCH or 2 Navigate to the term in the DATA TREE".

The interface is divided into two main sections:

- SEARCH: Entry**
Enter Search Word or Phrase Below
Search:
☐ Match Entire Search Terms Only
- SEARCH: Results**
Results of Your Search Will Appear Below
Entering a search term above will perform a search for the term entered as well as alternate meanings.
For example, entering 'throat' will search for 'pharynx' as well as 'throat'.

The **DATA TREE** section is titled "Browse DataTree Directly, Or Use Search for Prompting" and lists the following categories:

- [Digestive System](#)
- [Embryonic Tissue](#)
- [Endocrine Gland System](#)
- [Integument System](#)
- [Lymphohematopoietic System](#)
- [Musculoskeletal System](#)
- [Nervous System](#)
 - [CNS](#)
 - [CNS - Brain](#)
 - [CNS - Spinal Cord](#)
 - [PNS](#)

Searching a Node

WebTree Navigator v1.1 - Microsoft Internet Explorer

cancer.gov

NATIONAL CANCER INSTITUTE **EVS** ENTERPRISE VOCABULARY SERVICES

TO LOCATE A TERM: 1 Enter a word or phrase in SEARCH or 2 Navigate to the term in the DATA TREE

SEARCH: Entry

Enter Search Word or Phrase Below

Search:

☐ Match Entire Search Terms Only

SEARCH: Results

Results of Your Search Will Appear Below

CNS - Brain	<input type="button" value="SHOW in DATATREE"/>
CNS - Brain - Astrocyte	<input type="button" value="SHOW in DATATREE"/>
CNS - Brain - Brain Stem	<input type="button" value="SHOW in DATATREE"/>
CNS - Brain - Cerebellum	<input type="button" value="SHOW in DATATREE"/>
CNS - Brain - Cerebrum/Cortex	<input type="button" value="SHOW in DATATREE"/>
CNS - Brain - Choroid Plexus	<input type="button" value="SHOW in DATATREE"/>

DATA TREE

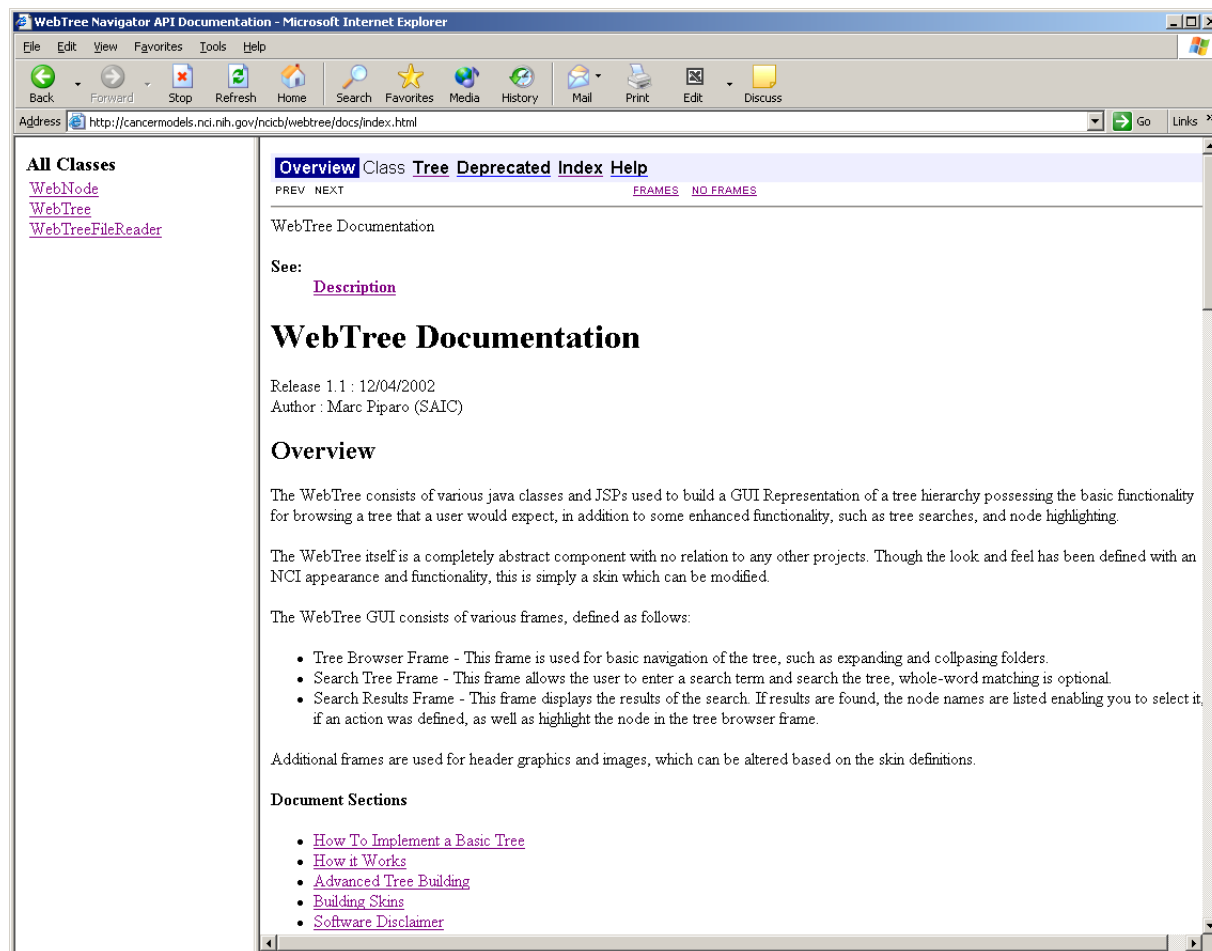
Browse DataTree Directly, Or Use Search for Prompting

- [Endocrine Gland System](#)
- [Integument System](#)
- [Lymphohematopoietic System](#)
- [Musculoskeletal System](#)
- [Nervous System](#)
 - [CNS](#)
 - [CNS - Brain](#)
 - [CNS - Spinal Cord](#)
 - [PNS](#)
 - [Neuroblast](#)
- [Reproductive System](#)
- [Respiratory System](#)

Configuring EVS Web Tree

- ▶ Download the EVS Web Tree application from the NCICB Download site:
 - o <http://ncicb.nci.nih.gov/download/index.jsp>
(will be available in caCORE 3.0 release due Nov 2004)
- ▶ Configure
 - o the web container
 - o Skin to match the main web app.
- ▶ Utilize the EVS Web Tree API in applications

EVS Web Tree API



Using EVS Web Tree in Applications – Cancer Models

The screenshot shows the MMHCC Cancer Models Database search page. The header includes the cancer.gov logo, the National Cancer Institute logo, and the MMHCC Cancer Models Database title with the subtitle 'the Mouse Models of Human Cancers Consortium'. Navigation links for Home, New Search, and Help are present. The main search area is titled 'Search' and contains the following fields:

- Model Descriptor / Name:
- PI's Name:
- Site of Lesion / Tumor: (with a 'Select' button and a red arrow pointing to it)
- Diagnosis: (with a 'Select' button)
- Species:

Below the search fields are 'Search' and 'Clear' buttons. A link for 'Simple Search Mode' is located at the bottom right of the search section. The 'Genetic Description' section includes:

- Gene Name:
- Genomic Segment Designator:
- Checkboxes for 'Engineered Transgene' and 'Targeted Modification'.

Using EVS Web Tree in Applications – Cancer Models

WebTree Navigator v1.1 - Microsoft Internet Explorer

cancer.gov

NATIONAL CANCER INSTITUTE

EVs ENTERPRISE VOCABULARY SERVICES

TO LOCATE A TERM: 1 Enter a word or phrase in SEARCH OR 2 Navigate to the term in the DATA TREE

SEARCH: Entry
Enter Search Word or Phrase Below

Search:

☐ Match Entire Search Terms Only

SEARCH: Results
Results of Your Search Will Appear Below

Entering a search term above will perform a search for the term entered as well as alternate meanings.

For example, entering 'throat' will search for 'pharynx' as well as 'throat'.

DATA TREE
Browse DataTree Directly, Or Use Search for Prompting

Tissue Type

- ☐ Cardiovascular System
- ☐ Digestive System
- ☐ Embryonic Tissue
- ☐ Endocrine Gland System
- ☐ Integument System
- ☐ Skin
- ☒ Mammary Fat Pad
- ☐ Mammary Gland
- ☐ Lymphohematopoietic System
- ☐ Musculoskeletal System
- ☐ Nervous System
- ☐ Reproductive System
- ☐ Respiratory System
- ☐ Special Sensory Organs
- ☐ Urinary System

Using EVS Web Tree in Applications – Cancer Models

WebTree Navigator v1.1 - Microsoft Internet Explorer

cancer.gov

NATIONAL CANCER INSTITUTE

EVs ENTERPRISE VOCABULARY SERVICES

TO LOCATE A TERM: 1 Enter a word or phrase in SEARCH 0/1 2 Navigate to the term in the DATA TREE

SEARCH: Entry

Enter Search Word or Phrase Below

Search:

☐ Match Entire Search Terms Only

DATA TREE

Browse DataTree Directly, Or Use Search for Prompting

Tissue Type

- [Cardiovascular System](#)
- [Digestive System](#)
- [Embryonic Tissue](#)
- [Endocrine Gland System](#)
- [Integument System](#)
- [Lymphohematopoietic System](#)
- [Musculoskeletal System](#)
- [Nervous System](#)
- [Reproductive System](#)
- [Respiratory System](#)
- [Special Sensory Organs](#)
- [Urinary System](#)

SEARCH: Results

Results of Your Search Will Appear Below

Search Results Include Alternative Terms

[Mammary Fat Pad](#)

[Mammary Gland](#)

Alternate Search Terms Used

mammary gland/

Using EVS Web Tree in Applications – Cancer Models

cancer.gov
NATIONAL CANCER INSTITUTE

MMHCC Cancer Models Database
the Mouse Models of Human Cancers Consortium

[Home](#) [New Search](#) [Help](#)

Search

Model Descriptor / Name:

PI's Name:

Site of Lesion / Tumor: Mammary Gland

Diagnosis:

Species:

[Simple Search Mode](#)

Genetic Description:

Gene Name:

☐ Engineered Transgene ☐ Targeted Modification

Genomic Segment Designator:

Using EVS Web Tree in Applications – Cancer Models

WebTree Navigator v1.1 - Microsoft Internet Explorer

cancer.gov

NATIONAL CANCER INSTITUTE

EVS ENTERPRISE VOCABULARY SERVICES

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Search:

☐ Match Entire Search Terms Only

SEARCH: Results

Results of Your Search Will Appear Below

Entering a search term above will perform a search for the term entered as well as alternate meanings.

For example, entering 'throat' will search for 'pharynx' as well as 'throat'.

DATA TREE

Browse DataTree Directly, Or Use Search for Prompting

Show All Diagnoses

Diseases of the Mammary Gland

- Benign Neoplasms of the Mammary Gland
 - [Adenoma of the Mammary Gland](#)
 - [Adenomyoepithelioma of the Mammary Gland](#)
 - [Fibroadenoma of the Mammary Gland](#)
 - [Papilloma of the Mammary Gland](#)
- Inflammatory Conditions of the Mammary Gland
- Intraepithelial Neoplasia of the Mammary Gland
- Malignant Neoplasms of the Mammary Gland
- Non-neoplastic Proliferation of the Mammary Gland
- Non-proliferative Developmental Conditions of the Mammary Gland

Using EVS Web Tree in Applications – Cancer Models

Search

Model Descriptor / Name

PI's Name

Site of Lesion / Tumor [Help](#)

Diagnosis [Help](#)

Species

[Simple Search Mode](#)

Genetic Description:

Gene Name:

☐ Engineered Transgene ☐ Targeted Modification

Genomic Segment Designator:

Select Inducing Agent for Induced Mutation:

Carcinogenic Agents:

Models with Carcinogenic Interventions: ☐ Check here to search for models with Carcinogenic interventions data



Q & A

- ▶ <http://ncicb.nci.nih.gov/core/caBIO>